

MSDS #8473 COVER SHEET

16106	Pierce® GST Spin Purification Kit
Component #	Description
1862312	Equilibration/Wash Buffer
0078259	Glutathione
1862309	Pierce® Glutathione Spin Column

16107	Pierce® GST Spin Purification Kit
Component #	Description
1862312	Equilibration/Wash Buffer
0078259	Glutathione
1862310	Pierce® Glutathione Spin Column

16108	Pierce® GST Spin Purification Kit
Component #	Description
1862312	Equilibration/Wash Buffer
0078259	Glutathione
0016105	Pierce® Glutathione Spin Column

Material Safety Data Sheet

1. Product and company identification

Product name	: Wash Buffer 2		
Synonym	: Wash Buffer 2; Equilibration/Wash Buffer		
Supplier	: Thermo Fisher Scientific	Manufacturer	: Thermo Fisher Scientific
	Pierce Biotechnology		Pierce Biotechnology
	P.O. Box 117		P.O. Box 117
	Rockford, IL 61105		Rockford, IL 61105
	United States		United States
	815.968.0747 or		815.968.0747
	800.874.3723		800.874.3723
Product No.	: 0078256 0078396 1862312 1877777		
MSDS #	: 2677		
Validation date	: 5/10/2010.		
Print date	: 5/10/2010.		
Responsible name	: MSDS Specialist		
In case of emergency	: CHEMTREC:	Use of	: Refer to the instruction booklet for
	800.424.9300	Substance/Preparation	proper and intended use.
	OUTSIDE US:		Otherwise, contact supplier for
	202.483.7616		specific applications.

2. Hazards identification

Physical state	: Liquid.
Odor	: Odorless.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING ! CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Irritating to eyes, respiratory system and skin. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: No known significant effects or critical hazards.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.
Potential chronic health effects	
Chronic effects	: Contains material that can cause target organ damage.

5/10/2010.

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Wash Buffer 2

2. Hazards identification

Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which may cause damage to the following organs: kidneys, liver, skin.
Over-exposure signs/symptoms	
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.

See toxicological information (section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Tris (Tris(hydroxymethyl)aminomethane)	77-86-1	1 - 3

Europe

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC number	Classification
Tris (Tris(hydroxymethyl)aminomethane)	77-86-1	1 - 3	201-064-4	Xi; [1] R36/37/38

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

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4. First aid measures

- Inhalation** : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
 - Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Europe

No exposure limit value known.

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8 . Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Color** : Clear. Colorless.
- Odor** : Odorless.
- pH** : 7.9 to 8.1
- Solubility** : Soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

- Chemical stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Will not occur.

11 . Toxicological information

United States

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
trometamol	LD50 Intravenous LD50 Oral	Rat Rat	1800 mg/kg 5900 mg/kg	- -

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
trometamol	-	-	-	None.	-	None.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Europe

- Chronic effects** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Other adverse effects

Conclusion/Summary : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

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13 . Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not regulated.	-	-	-

PG* : Packing group

15 . Regulatory information

United States

- HCS Classification** : Irritating material
Target organ effects
- U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: trometamol
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: trometamol: Immediate (acute) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Canada

- WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic).
Canadian lists : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

- Canada inventory** : **Canada inventory**: All components are listed or exempted.

EU regulations

- Risk phrases** : This product is not classified according to EU legislation.

International regulations

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15 . Regulatory information

- International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Korea inventory (KECI): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Japan inventory (ENCS): All components are listed or exempted.

16 . Other information

- Label requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :

Health	2
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



- Date of printing** : 5/10/2010.
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Date of previous issue : 5/14/2009.
Version : 1.02

☑ Indicates information that has changed from previously issued version.

Full text of R-phrases : R36/37/38- Irritating to eyes, respiratory system and skin.

Full text of classifications : Xi - Irritant

referred to in sections 2 and 3 - Europe

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

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Material Safety Data Sheet

1. Product and company identification

Product name	: Glutathione		
Synonym	: Agifutol S; Copren; Deltathione; Glutamed; Glutasan; Glutathin; Glutathiol; Glutathion; Glutathione; Glutathione (reduced); Glutathione SH; Glutathiol; Glutathione; L-Glutathione; Glutide; Glutinal; GSH; Isethion; N-(N-L-gamma-glutamyl-L-cysteinyl)-glycine; Neuthion; Panaron; Reduced glutathione; Tathiclon; Tathion; Tathionil; Tathione; Triptide		
Chemical formula	: C ₁₀ H ₁₇ N ₃ O ₆ S		
Supplier	: Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 or 800.874.3723	Manufacturer	: Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 800.874.3723
Product No.	: 0078259 0078395 1858599 1889562		
MSDS #	: 3927		
Validation date	: 4/9/2009.		
Print date	: 4/9/2009.		
Responsible name	: MSDS (Regulatory Affairs)		
In case of emergency	: CHEMTREC: 800.424.9300 OUTSIDE US: 202.483.7616	Use of Substance/Preparation	: Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

2. Hazards identification

Physical state	: Solid. [Powdered solid.]
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING ! CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE. Irritating to eyes, respiratory system and skin. Avoid contact with eyes, skin and clothing. Can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: No known significant effects or critical hazards.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.
Potential chronic health effects	

4/9/2009.

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Glutathione

2. Hazards identification

Chronic effects	: Can cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Causes damage to the following organs: the reproductive system.
Over-exposure signs/symptoms	
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: pain or irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

The substance is classified as dangerous according to Directive 67/548/EEC and its amendments.

Classification	: Xn; R68 Xi; R36/37
Human health hazards	: Possible risk of irreversible effects. Irritating to eyes and respiratory system.
See toxicological information (section 11)	

3. Composition/information on ingredients

<u>United States</u>					
<u>Name</u>	<u>CAS number</u>	<u>%</u>			
Glutathione	70-18-8	98 - 100			
<u>Europe</u>					
Substance/preparation	: Substance				
<u>Ingredient name</u>	<u>CAS number</u>	<u>%</u>	<u>EC number</u>	<u>Classification</u>	
Glutathione	70-18-8	98 - 100	200-725-4	Xn; R68 Xi; R36/37	[1]

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

4/9/2009.

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Glutathione

3. Composition/information on ingredients

Occupational exposure limits, if available, are listed in section 8.

4. First aid measures

- Inhalation** : Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

- Flammability of the product** : No specific fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
sulfur oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

4/9/2009.

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Glutathione

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

- Europe**
No exposure limit value known.
- Consult local authorities for acceptable exposure limits.**
- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

4/9/2009.

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Glutathione

8 . Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Solid. [Powdered solid.]

Color : White.

Molecular weight : 307.33 g/mole

Molecular formula : C₁₀H₁₇N₃O₆S

Melting/freezing point : 192 to 195°C (377.6 to 383°F)

Solubility : Easily soluble in the following materials: cold water and hot water.
Soluble in the following materials: methanol.

10 . Stability and reactivity

Chemical stability : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions : Will not occur.

Glutathione

11 . Toxicological information

United States

Acute toxicity

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Can cause gastrointestinal disturbances. Can cause dermatitis and pulmonary edema. Effects may be delayed. Exposure can cause stomach pains, vomiting and diarrhea.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
glycine, n-(n-l-?-glutamyl-l-cysteinyl)-	-	-	-	None.	-	None.

Mutagenicity

Conclusion/Summary : Laboratory experiments have shown mutagenic effects.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Europe

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Glutathione

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not regulated.	-	-	-

PG* : Packing group

15 . Regulatory information

United States

- HCS Classification** : Irritating material
Target organ effects
- U.S. Federal regulations** : **United States inventory (TSCA 8b)**: This material is listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: glycine, n-(n-l-?-glutamyl-l-cysteinyl)-
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: glycine, n-(n-l-?-glutamyl-l-cysteinyl)-: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Canada

- WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).
- Canadian lists** : **CEPA Toxic substances**: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

- Canada inventory** : **Canada inventory**: This material is listed or exempted.

EU regulations

- Hazard symbol or symbols** :



Harmful

- Risk phrases** : R68- Possible risk of irreversible effects.
R36/37- Irritating to eyes and respiratory system.

- Safety phrases** : S36/37- Wear suitable protective clothing and gloves.

International regulations

4/9/2009.

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Glutathione

15 . Regulatory information

- International lists** : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Korea inventory (KECI): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Japan inventory (ENCS): This material is listed or exempted.

16 . Other information

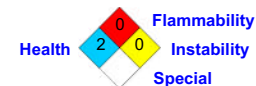
- Label requirements** : CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE.

- Hazardous Material Information System (U.S.A.)** :

Health	2
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

- National Fire Protection Association (U.S.A.)** :



- Date of printing** : 4/9/2009.
Date of issue : 4/9/2009.
Date of previous issue : No previous validation.
Version : 1

Indicates information that has changed from previously issued version.

- Full text of R-phrases referred to in sections 2 and 3 - Europe** : R68- Possible risk of irreversible effects.
R36/37- Irritating to eyes and respiratory system.
- Full text of classifications referred to in sections 2 and 3 - Europe** : Xn - Harmful
Xi - Irritant

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

4/9/2009.

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Material Safety Data Sheet

1. Product and company identification

Product name	: Immobilized Glutathione Resin		
Synonym	: Pierce® Glutathione Agarose; Pierce® Glutathione Spin Columns		
Supplier	: Thermo Fisher Scientific	Manufacturer	: Thermo Fisher Scientific
	Pierce Biotechnology		Pierce Biotechnology
	P.O. Box 117		P.O. Box 117
	Rockford, IL 61105		Rockford, IL 61105
	United States		United States
	815.968.0747 or		815.968.0747
	800.874.3723		800.874.3723
Product No.	: 0016100 0016101 0016102 0016103 0016104 0016105 1862309 1862310 1901822		
MSDS #	: 8445		
Validation date	: 5/10/2010.		
Print date	: 5/10/2010.		
Responsible name	: MSDS Specialist		
In case of emergency	: CHEMTREC:	Use of	
	800.424.9300	Substance/Preparation	Refer to the instruction booklet for
	OUTSIDE US:		proper and intended use.
	202.483.7616		Otherwise, contact supplier for
			specific applications.

2. Hazards identification

Physical state	: Liquid. [Resin Slurry.]
Odor	: Odorless.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Slightly irritating to the eyes, skin and respiratory system. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: No known significant effects or critical hazards.
Skin	: Slightly irritating to the skin.
Eyes	: Slightly irritating to the eyes.
Potential chronic health effects	
Chronic effects	: Contains material that can cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.

5/10/2010.

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Immobilized Glutathione Resin

2. Hazards identification

Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which causes damage to the following organs: the reproductive system.

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.

See toxicological information (section 11)

3. Composition/information on ingredients

United States

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Glutathione	70-18-8	0.1 - 1

Substance/preparation : Preparation

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Inhalation	: Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
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Immobilized Glutathione Resin

4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
sulfur oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Immobilized Glutathione Resin

6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

- Europe**
No exposure limit value known.
- Consult local authorities for acceptable exposure limits.**
- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Immobilized Glutathione Resin

8 . Exposure controls/personal protection

- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state** : Liquid. [Resin Slurry.]
- Color** : Off-white. [Light]
- Odor** : Odorless.
- Dispersibility properties** : Partially dispersible in the following materials: cold water and hot water.

10 . Stability and reactivity

- Chemical stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Will not occur.

11 . Toxicological information

United States

Acute toxicity

- Conclusion/Summary** : To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

Chronic toxicity

- Conclusion/Summary** : Not available.

Carcinogenicity

- Conclusion/Summary** : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
glycine, n-(n-l-?-glutamyl-l-cysteinyl)-	-	-	-	None.	-	None.

Mutagenicity

- Conclusion/Summary** : Not available.

Immobilized Glutathione Resin

11 . Toxicological information

Teratogenicity

- Conclusion/Summary** : Not available.

Reproductive toxicity

- Conclusion/Summary** : Not available.

Europe

- Chronic effects** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

12 . Ecological information

- Environmental effects** : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

- Conclusion/Summary** : Not available.

13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Dispose of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not available.	Not available.	Not available.	-

PG* : Packing group

Immobilized Glutathione Resin

15 . Regulatory information

United States

- HCS Classification** : Target organ effects
- U.S. Federal regulations** : TSCA 8(a) IUR: sucrose
United States inventory (TSCA 8b): Not determined.
 TSCA 12(b) one-time export: 3(2h)-isothiazolone, 2-methyl-
- SARA 302/304/311/312 extremely hazardous substances**: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: glycine, n-(n-l-?-glutamyl-l-cysteinyl)-
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 glycine, n-(n-l-?-glutamyl-l-cysteinyl)-: Immediate (acute) health hazard, Delayed (chronic) health hazard
- Clean Water Act (CWA) 307**: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Canada

- WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).
 Class D-2B: Material causing other toxic effects (Toxic).
- Canadian lists** : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

- Canada inventory** : **Canada inventory**: Not determined.

EU regulations

- Risk phrases** : This product is not classified according to EU legislation.

International regulations

- International lists** : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Korea inventory (KECI): Not determined.
Philippines inventory (PICCS): Not determined.
Japan inventory (ENCS): Not determined.

16 . Other information

- Label requirements** : MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :

Health	1
Flammability	0
Physical hazards	0

5/10/2010.

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Immobilized Glutathione Resin

16 . Other information

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



- Date of printing** : 5/10/2010.
Date of issue : 5/10/2010.
Date of previous issue : 4/26/2010.
Version : 1.01

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

5/10/2010.

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